

DISCRETE CHOICE ANALYSIS AND CHOICE EXPERIMENT DESIGN

INSTITUTE OF TRANSPORT AND
LOGISTICS STUDIES

FEBRUARY 2012

Almost without exception, everything human beings undertake involves a choice. In recent years there has been a growing interest in the development and application of quantitative statistical methods to study choices made by individuals or groups with the purpose of gaining a better understanding both of how choices are made and of forecasting future choice responses. These courses will provide an unthreatening introduction to the main techniques of choice analysis and the design of choice experiments.

COMMENTS FROM PAST PARTICIPANTS

“State of the art practice. Instructors share the latest techniques and ideas from the literature.”

“Excellent practical introduction to modelling and survey design. Very good instructors.”

“Depth of knowledge of presenters who are leaders in their field in theory and practice, and their familiarity with, and enthusiasm for, content.”

“A balanced mixture of lectures and practical classes.”

“Ability of the instructors to deliver complex concepts in a clear manner and ability to share cutting edge research.”

Discrete choice modelling and stated choice methods are widely used in such diverse fields as marketing, transport and environmental and health economics, to study the behavioral responses of individuals, households, as well as other organizations. These courses are designed to provide both theory and practical experience in the building and estimating of simple (e.g., Multinomial Logit (MNL)) and more advanced choice models (e.g., generalised MNL), as well as in generating stated choice experimental designs. The course will also cover likely future developments in the field of discrete choice modelling. Whilst theory will be covered, significant time will be spent in a computer lab, working on building models using real data, and generating workable designs. Those completing the courses will be capable of transferring the techniques taught to their own research areas.

These courses are intended for researchers in marketing, economics, health services, environmental science, engineering, planning, transportation, logistics and fields in which consumer demand and choice is of interest. The courses are intended for practitioners, academics, and managers in government and industry. Experience with discrete choice modeling will be helpful, as is experience with Microsoft Excel. Participants should have an appreciation of basic statistical concepts and some familiarity with econometrics, but advanced training is not necessary.

VENUE

Institute of Transport and Logistics Studies

University of Sydney Business School
144 Burren Street, Newtown, Sydney

sydney.edu.au/business/itls/directions

FEE

The total fee per course, including all course materials (including "Applied Choice Analysis: A Primer" by David Hensher, John Rose and Bill Greene, Cambridge University Press, 2005), refreshments and lunches, for the five days is \$3,200 (GST exempt) for academics and \$4,000 for consultants/government employees. Research students may apply for up to \$1,000 scholarship discount. To access the discount, the student's supervisor will be required to write to Professor John Rose – john.rose@sydney.edu.au - citing how attendance is relevant to their research thesis. Numbers are limited so please book early to avoid disappointment. Where three or more persons from the same organisation attend, a 10% discount per attendee will be granted (not including research student scholarship holders).

REGISTER ON-LINE AT:
sydney.edu.au/business/itls/choice

These courses will be taught by three of the world's leading academics in this field: Professors David Hensher, John Rose and Michiel Bliemer.

sydney.edu.au/business/itls/about/staff

DISCRETE CHOICE ANALYSIS

6-10 February 2012, 9am to 5pm

This is a practical and theory based course. We will be teaching how to estimate discrete choice models using software, and how to interpret the outputs using a real life data set for this. We will cover MNL, nested logit, latent class, error components, mixed logit (random parameters) and generalised mixed logit models. New developments in estimation such as estimation in willingness to pay space will also be discussed in the course. Widely used statistical tests, such as the Krinsky and Robb procedure will also be covered.

The focus of the course will be on the entire process, choice modelling and application (including of data definition, stated preference and revealed preference data). Recent advances in tools and methods have been used to model individual behaviour and to analyse market shares and change in demand in response to pricing and income and changes in available choice sets and choice characteristics. This course takes participants through the full suite of methods from simple multinomial logit through to nested and mixed logit models for ordered and unordered choices for ranks, rates and choice responses. A variety of applications will be used to illustrate the techniques. The course will include presentations of the background theory for discrete choice modelling, different methods for combining survey data, and the most recently developed modelling techniques including hypothetical bias and information processing.

Recent applications and hands on problems with actual data sets will be used to augment the presentations. Applications will be developed using well known, widely available software. NLOGIT 4.0/Limdep 9.0 (software) [Econometric software, inc. 2005] will be used in laboratory sessions. Those who do not have a copy may purchase one for a course discount price of \$1,000 plus GST.

CHOICE EXPERIMENT DESIGN

13-17 February 2012, 9am to 5pm

For any research topic, whether conducted by an academic or practitioner, obtaining relevant data is extremely important. This is particularly true of studies involving the modeling of discrete choices made by individuals or organisations.

This course will focus on one particular data paradigm of discrete choice data, that is stated choice. Stated choice data involves providing respondents with hypothetical situations consisting of multiple alternatives. Whilst many believe that only real market data (known as revealed preference data) can be used to model discrete choices, stated preference data allows the analyst to explore the preferences for nonexistent goods or services, to model outside of the range of current market data, and to evaluate the preferences and values of goods that are not traded in real markets (such as environmental goods). The generation of the hypothetical situations that make up stated choice data is very much a science.

Topics covered include how to generate orthogonal designs from first principles, D-efficient designs (improving the reliability of parameter estimates), as well as S-efficient designs (a new concept examining sample size for stated choice experiments). The course is both theoretical and practical. Most of the time participants will be in the class room generating designs using Microsoft Excel and Ngene (a new dedicated experimental design software package). By the end of the fifth day participants will be able to generate completely usable designs (including efficient designs for MNL and MMNL type models).

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